



Manager's Corner By: Karen Kilpatrick

Transition. It is defined in the dictionary as "passage from one form, state, style, or place to another." The hatchery is seeing a lot of transition lately! We have been in transition for about a year now ... transitioning species, responsibilities, and even operational standards within the Service. The species transition was the easiest and culminated a multi-year process of working with partners and facility capabilities to make sure the hatchery meshed with the future direction of the Service. Mission accomplished!

The next transition has been in responsibilities. I am retiring 12/2/11, another employee is retiring 4/1/12, and another is eligible. So, needless to say, we had to make some changes in how we operate around here! Assistant Manager Jan Dean has done an excellent job of taking care of the day-to-day operations of the hatchery and is now quite acquainted with the visioning portion of my job. Between him and biologist Tony Brady I think the hatchery will be in good hands. Another mission accomplished!



Out with the old programs such as pallid sturgeon, and in with the new....



... freshwater mussels.

And then there is the last major transition...and we're waiting that one out! The Service is undergoing a major change in operations by shifting the business logistics model and combining property, finances, personnel, and maintenance into one big system. I might not have all the details straight because I am retiring and have tried my best to stay out of this particular transition. But the name of the transition is FBMS ... Financial and Business Management System. As per the Department of the Interior website, FBMS "is the cornerstone to the Department of the Interior's future. It is key to the department's financial management modernization strategy and meeting future business needs. The implementation of FBMS will allow the department to realize the benefits of common processes, a common technology platform, integrated real-time data, and improved operational decision-making." This transition is a long way from being accomplished and will prove challenging to all involved. As it unfolds, and not under my purview, I wish everyone the best as I concentrate on transitioning into retirement! Take care.

Natchitoches NFH participates in Tensas River NWR Hunting and Fishing Day

By: Tony Brady



The Mussel Booth setup at TRNWR Hunting and Fishing Day.

Tensas River National Wildlife Refuge (TRNWR) was established through Public Law 96-285 on June 28, 1980 to preserve one of the largest privately owned tracts of bottomland hardwoods remaining in the Mississippi Delta. The bottomland hardwood forest contains a diversity of plant and animal species. Over 400 species of mammals, birds, reptiles, amphibians, and fish can be found on the refuge. The refuge consists of nearly 80,000 acres of bottomland hardwoods and oxbow lakes. This type of habitat once covered 25 million acres of the Mississippi Alluvial Valley.

Tensas River National Wildlife Refuge offers many unique opportunities to visitors. The TRNWR is home to the state's largest population of federally-listed threatened Louisiana black bear. Visitors canoeing down the Tensas River are likely to see all kinds of wildlife including alligators, wild turkeys, and deer. Thousands of migrating and wintering waterfowl use the TRNWR as habitat to feed, rest or over-winter. However, there is one group of animals that are often over looked by visitors, and they are the freshwater mussels that live in the Tensas River.

Natchitoches National Fish Hatchery (NNFH) was able provide over 1000 visitors to TRNWR the opportunity to explore the life of freshwater mussels. The hatchery was asked to man a booth at the annual Hunting and Fishing Day hosted by the TRNWR on 17 September, 2011. The hatchery staff spent an afternoon of the 16th snorkeling the Tensas River collecting nearly 80 mussels comprised of 10 species. During the Hunting and Fishing Day, mussels were placed in a touch tank for kids and adults alike to handle and experience these buried treasures on the refuge. As the families were drawn

into the booth to play with the mussels, they were also taught about the unique life cycle of freshwater mussels. What makes a mussel's life cycle unique? Well, the answer to that question is that mussels are like butterflies such that they produce a larval form that must undergo a metamorphosis. These microscopic larval mussels, called glochidia, do their cocooning on the gills and fins of fish. Some mussels are specialized and use only a few if not just a single fish species to complete their life cycle. Freshwater mussels were given different strategies to ensure that their glochidia attach to the required fish species. After several weeks riding around on the fish, the still microscopic transformed mussels break free from their "cocoon" and drift to the bottom of the river and begin living on their own.

The strategies used by freshwater mussels to deliver their glochidia to the proper host fish really capture the attention of people when they first learn about mussels. Some mussel species use a lure to attract the desired fish close enough to expose the fish to their glochidia. Other mussels produce packets, called conglomerates, that fish attempt to eat which when broken open, release glochidia to attach to the fish. Still other mussels capture their host fish and hold them while they release glochidia to attach to the fish. While several species of mussels may use a lure to attract their host fish, these lures vary from minnows, to crawfish, and even snails, depending on the host fish required. Not to be outdone, the conglomerate producing mussel species make conglomerates that resemble larval fish, worms, and even a perfect match to a black fly larva to deploy their glochidia to the host fish. Within the last decade, one group of mussels was discovered to literally capture their required host fish and while holding onto them, the female mussel releases glochidia directly onto the fish. Even after working with freshwater mussels for nearly 15 years, the author is still amazed at how complex and wonderfully made these animals are.



Two young girls enjoying the mussel touch tank.

Electrofishing Presentation at Seattle AFS Meeting

By: Jan Dean

Assistant manager Jan Dean presented “A Model for Predicting Conductivity Range for Effective Electrofishing” at the American Fisheries Society’s Innovations in Electrofishing Technology and Techniques Symposium, Seattle, WA, September 5, 2011. There have been two International electrofishing meetings – the 1966 Symposium on Electric Fishing in Belgrade, Yugoslavia, and the 1988 International Symposium on Fishing with Electricity in Hull, England. The 2011 AFS electrofishing symposium mentioned above is the closest thing to an International electrofishing meeting in over 20 years, so it was considered an honor to attend it and to make a presentation there. Dean’s presentation is a result of the work done by he and Dr. Alan Temple of the FWS National Conservation Training Center there at NCTC in the summer of 2009. The two researchers conducted studies of two commercial backpack electrofishers to determine the maximum output of peak power in waters of varying ambient conductivity, or their ability to conduct electrical current based upon ions dissolved in the water. The results allowed the development of a predictive model which was presented during the symposium as a tool useful to



Jan Dean at the needle thinking “That is one big electrode.”



The emblem for the 2011 AFS meeting in Seattle.

fisheries biologists and to electrofisher manufacturers for evaluating their equipment and for making informed purchase and sampling decisions.

While at the AFS meeting, Dean and Temple visited with electrofisher manufacturers at the associated trade show. They conducted testing of the electrical output from a Hall-Tech backpack electrofisher with Murray Hall, president of Hall-Tech; conferred with Midwest Lake Electrofishing Systems president Shawn Banks and physicist Tom Lehman, among others, regarding the capabilities of their electrofishing boat pulsator, the Infinity box; and discussed several topics with president Jeff Smith of Smith-Root Electrofishing, including the testing of their prototype boat electrofisher metering which is just being released to market and which was showcased at the meeting trade show. Dean and Temple also met with Dr. Mike Holliman, formerly with Smith-Root, who presented on the new Smith-Root metering as well as on his research into the effects of electrical waveforms and power densities on Asian carp in a simulation of the Chicago Sanitary and Ship Canal electrical barrier to the movement of Asian carp into Lake Michigan. The entire AFS meeting experience proved very informative for improving the FWS Electrofishing course, for dealing with Aquatic Invasive Species such as Asian carp and snakeheads, and for making contacts and strengthening ties with people working in these areas. Dean also listened to other presentations and discussed with presenters several other topics including alligator gar feeding and culture as well as public education and “telling our story” better. It was a great meeting for information exchange and for building professional relationships and partnerships.

It's Asian Carp...again

By Jan Dean

Dr. Tracy Hill, Project Leader of the Columbia Missouri Fish and Wildlife Conservation Office, invited Assistant Manager Jan Dean up to Columbia to study how better to capture Asian carp by electrofishing. Through some coordination among all the parties, the USGS CERC lab in Columbia allowed Tracy, Jan and Wyatt Doyle of the Fish and Wildlife Service to use some of their lab space and some of their Asian carp for this study. Shawn Banks and Tom Lehman of Midwest Lake Electrofishing Systems graciously came over and set up the electrical power supply and metering for the study. Wire mesh panels at each end of the tank were used for the two electrodes, and the power was supplied by a Midwest Lake electrofishing boat pulsator called the Infinity box. It allows independent control of electrical frequency, duty cycle (the percent of time the electrical current is on) and voltage over the range needed for the study.

Small Asian carp (silver carp and bighead carp) were introduced into the tank which was then energized for about four seconds, and the fish response was noted. This was repeated multiple times to determine the appropriate waveforms and power levels needed for fish attraction to the electrode and for immobilization of the fish. Those responses are important for fish capture when electrofishing. The tank was set up to have the same amount of electrical power throughout, and this characteristic is needed to quantify the power needed for fish response. The tank study results were



Fish response being evaluated by Dr. Tracy Hill and Shawn Banks, and Wyatt Doyle is recording the fish response for documentation and future reference.

later used when shocking Asian carp in a stream, Petit Saline, off the Missouri River. The capture success increased substantially from previous efforts, so the combined lab and field study was considered a success.

Asian carp, of multiple species, are considered aquatic invasive species which were brought to this country from China in the late 1960s and 1970s to control aquatic vegetation and excess plankton production in fish ponds. Despite man's best intentions and attempts at control, nature usually finds a way around those controls, and Asian carp are no exception. Some of these fish escaped into large rivers where they could reproduce successfully. Now there are substantial efforts to keep them from spreading, and a key control point is a canal near Chicago which leads to Lake Michigan. The Columbia Fish and Wildlife Conservation Office has been involved in that effort, and that is one reason for this study to develop better capture techniques. Oh, why the "again" part of the title? Well it just so happens that Assistant Manager Dean conducted fish culture research in Arkansas back in 1977-78. Guess what? Some of the species he conducted research with were Asian carps including grass carp, silver carp and bighead carp. They were called Chinese carp back then, and those in favor of grass carp called them White Amur. That kinda sounds like a French or Italian word for love, you see. The real reason for their name is that they came from the Amur River between China and Russia, but the prior answer is a little more romantic.



One goal of the study was to attract fish to the anode in front of the electrofishing boat. It seems to work, even with these jumping silver carp. And several carp jumped into the boat.



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*Saving the world,
One species at a time..*



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Natchitoches NFH Welcomes a New Volunteer

By: Tony Brady

Natchitoches National Fish Hatchery (NNFH) would like to introduce Stephanie Davis as the newest volunteer at the hatchery. While Stephanie is new to Natchitoches and the hatchery, she is very familiar with the US Fish and Wildlife Service (USFWS). Stephanie has volunteered for years with the Bon Secour National Wildlife Refuge doing a variety of jobs such as assisting at open house days, beach clean up as part of the Friends group, education and training, beach mouse trapping and data collection, sea oat/beach grasses plantings, and primarily working with threatened and endangered nesting sea turtles and their hatchlings. As part of her sea turtle work, Stephanie helped organized and dispatch a team of over 100 volunteers that would cover Alabama's entire coastline surveying the beaches for both Loggerhead and Kemp's Ridley sea turtle nests. Stephanie's team patrolled the beaches, protected nests, and collected data used by USFWS biologists to monitor the health of the sea turtle populations in the Gulf of Mexico. So what could make Stephanie leave the beaches of Alabama and settle down in historic Natchitoches? We would have to thank the man she is happily married to, Jon Paul Davis, also known as Coach Davis, the head baseball coach for Northwestern State University, for bringing Stephanie to our fair city. While NNFH doesn't work with sea turtles, Stephanie was excited to hear that the hatchery does do some work with Alligator snapping turtles. She is also very interested in learning about the other programs the hatchery is involved in such as the Alligator gar and freshwater mussels. The hatchery staff is excited to have Stephanie join our little family and hope that she gets as much enjoyment working here as she did in Alabama.



Stephanie and fellow volunteer Chuck Browdy watching over a turtle nest.